

## REMARKS

### Summary

Claims 1-4, 6-8, 20-28, and 31 are pending. Claim 9 is cancelled, and claims 1, 23, and 31 are amended. No new matter is added.

### Examiner Interview

Applicants thank the Examiner for the courtesies extended to Applicants' representative during an October 9, 2007, telephonic interview in which the outstanding rejections were discussed. Applicants' record of the substance of the interview is embodied in the remarks below.

### Use of the Term "surround"

The Office Action indicates that the present understanding of the term "surround" is that the membrane does not need to cover the active surface on all sides. This is substantially correct. The reason that such a situation is true when considering the active surface is that the combination of the enzyme layer and the sensing region of the active surface together are defined in the specification and the claims as forming an active sensing region. The functional recitation thus provides for a reason and benefit for the sensing region of the active surface to be surrounded by the enzyme layer, and allows for the incomplete coverage of the active surface in the region at which it does not provide a sensing function. Thus, one end of the sensor may, in an embodiment, have an electrode coil or other mechanism present and thus in that region does not provide a location for the combination of the enzyme layer and the active surface to form an active sensing region. This is consistent with the representation in Figure 2. In a more general sense, however, the term "surround" is intended to mean that the membrane provides an outside/exterior covering/coating. Therefore, when considering the scope of the recitation "surrounding said at least one nub," reference to Figure 2

shows that at least one nub is surrounded (covered/coated), not simply abutted or partially coated, by the membrane.

**102(b) Rejection of Claims 1-4, 6-9, and 31**

Claims 1-4, 6-9, and 31 are rejected under 35 USC 102(b) as being unpatentable over US Patent No. 4,703,756 to Gough (Gough '756). Applicants respectfully traverse the rejection in light of the amendments to the claims and the remarks below.

Gough '756 provides a sensor module having a housing within which is housed electrodes partially encased in glass. However, nowhere in Gough '756 is there a teaching or suggestion of an enzyme layer surrounding both the sensing region of an active surface and a nub. As is clearly shown in Figures 3, 4, and 5 of Gough '756, the enzyme is only located at the terminal end of the first electrode and on the tip of the insulating material, and thus does not surround both the sensing region of the active surface and a nub. Applicants' clarification of this feature is fully supported by the description and the figures of the present application. In particular, Figure 2 shows a membrane surrounding both the sensing region of the active surface and the nubs, which is quite different from the end-cap arrangement provided in Gough '756. Further, as discussed above, and in previous responses, the term "surround" requires more than abutting or partially covering the nub (as shown in Gough '756), but rather is directed to a covering/coating as shown in the specification and, for example, in Figure 2.

Thus, Gough '756 fails to teach at least one feature of claim 1, and therefore, claim 1 is patentable over Gough '756.

Claims 2-4 and 6-8 depend directly or indirectly on claim 1, incorporating the features of claim 1. Therefore, as claim 1 is patentable over Gough '756, so are claims 2-4 and 6-8 by virtue of at least their dependency.

Claim 31 contains language similar to that of claim 1 and thus is patentable over Gough '756 for at least the reasons discussed above. In addition to the reasons discussed above, claim 31 further provides for at least two nubs of dielectric material extending outwardly from an electrochemically active surface and forming a cavity along the electrochemically active surface and between the at least two nubs, and a

membrane system comprising an enzyme layer, the enzyme layer surrounding the at least two nubs and the electrochemically active surface at least along the cavity. As discussed above, the enzyme provided in Gough '756 is limited to the terminal end of the first electrode and on the tip of the insulating material, and thus does not surround the electrochemically active surface along a cavity between the nubs, nor does it surround at least two nubs. In fact, as discussed above, the enzyme in Gough '756 does not surround a single nub. Thus, claim 31 is patentable over Gough '756.

**103(a) Rejection of Claims 1-4, 6-9, 21-25, and 31**

Claims 1-4, 6-9, 21-25, and 31 are rejected under 35 USC 103(a) as being unpatentable over US Patent No. 4,671,288 to Gough (Gough '288) in view of Gough '756. Applicants respectfully traverse the rejection in light of the amendments to the claims and the remarks below.

Gough '288 provides a sensor module having a housing with one or more openings that may be in fluid communication with biological fluids. Membrane 24 may be applied at the opening(s) and may be used to control the permeation of glucose and oxygen. Gough '288 also includes an electrode 18 and various dielectric regions 27.

However, nowhere in Gough '288 is there a teaching or suggestion of an enzyme layer surrounding both a sensing region of an electrochemically active surface and a nub. As is clearly shown in Figures 1-9 of Gough '288, at no point does a membrane surround both the sensing region of the electrochemically active surface and a nub. Applicants' clarification of this feature is fully supported by the description and the figures of the present application. In particular, Figure 2 shows a membrane surrounding both the sensing region of the electrochemically active surface and a nub, which is quite different from the arrangement provided in Gough '288. The similar distinctions over Gough '756 are discussed above.

Thus, Gough '288 alone or in combination with Gough '756 fails to teach at least one feature of claim 1, and therefore, claim 1 is patentable over Gough '288 and Gough '756.

Claims 2-4, 6-8, and 21-25 depend directly or indirectly on claim 1, incorporating the features of claim 1. Therefore, as claim 1 is patentable over Gough '288 and Gough '756, so are claims 2-4, 6-8, and 21-25 by virtue of at least their dependency.

Claim 31 contains language similar to that of claim 1 and thus is patentable over Gough '288 and Gough '756 for at least the reasons discussed above. In addition to the reasons discussed above, claim 31 further provides for at least two nubs of dielectric material extending outwardly from an electrochemically active surface and forming a cavity along the electrochemically active surface and between the at least two nubs, and a membrane system comprising an enzyme layer, the enzyme layer surrounding the at least two nubs and the electrochemically active surface at least along the cavity. The enzyme provided in Gough '288 does not surround the electrochemically active surface along a cavity between the nubs, nor does it surround at least two nubs. In fact, as discussed above, the enzyme in Gough '288 does not surround a single nub. Thus, claim 31 is patentable over Gough '288 alone or in combination with Gough '756.

#### **103(a) Rejection of Claim 26**

Claim 26 is rejected under 35 USC 103(a) as being unpatentable over Gough '288 in view of Gough '756 in further view of US Patent No. 6,144,871 to Saitoh et al. (Saitoh). Applicants respectfully traverse the rejection in light of the amendments to the claims and the remarks below.

Claim 26 depends on claim 1, incorporating the features of claim 1. Therefore, as claim 1 is patentable over Gough '288 and Gough '756, so is claim 26 by virtue of at least its dependency. Saitoh fails to overcome the deficiencies of Gough '288 and Gough '756 discussed above. Thus, claim 26 is patentable over Gough '288, Gough '756, and Saitoh for at least the reasons discussed above with respect to claim 1.

#### **103(a) Rejection of Claims 27 and 28**

Claims 27 and 28 are rejected under 35 USC 103(a) as being unpatentable over Gough '288 in view of Gough '756 and further in view of US Patent No. 5,165,407 to

Wilson (Wilson). Applicants respectfully traverse the rejection in light of the amendments to the claims and the remarks below.

Claims 27 and 28 depend indirectly on claim 1, incorporating the features of claim 1. Therefore, as claim 1 is patentable over Gough '288 and Gough '756, so are claims 27 and 28 by virtue of at least their dependency. Wilson fails to overcome the deficiencies of Gough '288 and Gough '756 discussed above. Thus, claims 27 and 28 are patentable over Gough '288, Gough '756, and Wilson for at least the reasons discussed above with respect to claim 1.

**Conclusion**

In view of the foregoing, Applicant respectfully submits that claims 1-4, 6-8, 20-28, and 31 are in condition for allowance, and early issuance of the Notice of Allowance is respectfully requested.

If the Examiner has any questions, he is invited to contact the undersigned at (503) 796-2844. Please charge any shortages and credit any overages to Deposit Account No. 500393.

Respectfully submitted,  
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